Amendments to the Claims

1 Claim 1 (currently amended): A computer-implemented method of monitoring network

2 performance where performance requirements are already established in order to generate

3 anticipatory alerts, comprising ~~the steps of~~:

4   monitoring a performance-defining metric on a recurring basis to obtain samples of the

5 metric [[value]];

6   determining a trend in actual service based on the obtained samples of the metric using

7 linear regression, ~~said trend-determining step including the~~ further ~~steps of~~ comprising:

8   analyzing a set of samples obtained over a predetermined sampling interval to

9 determine whether the analyzed set satisfies predetermined ~~sample~~ reliability criteria, the

10 predetermined ~~sample~~ reliability criteria requiring a predetermined, minimum number of samples in

11 the set ~~of samples~~; and

12   ~~terminating the step of determining a trend~~ if the analyzed set of samples ~~fails to~~

13 ~~satisfy~~ satisfies the predetermined ~~sample~~ reliability criteria, then using the set of samples in the

14 linear regression; [[and]]

15   determining a predicted performance violation time equal to [[the]] a time at which the

16 actual service will cease to meet the established performance requirements if the determined trend

17 continues; and

18   generating an anticipartory alert if the predicted performance violation time falls within a

19 predetermined time window that begins at a current time.

Claims 2 - 3 (canceled)

1   Claim 4 (currently amended): A computer-implemented method as set forth in claim 1, wherein

2   ~~the step of~~ analyzing [[a]] the set of samples further comprises ~~the step of~~ determining whether

3   [[the]] a standard deviation of the set is greater than a predetermined percentage of [[the]] a mean

4   of the set of samples.

Claim 5 (canceled)

1   Claim 6 (currently amended): A computer-implemented method as set forth in claim [[5]] 1,

2   further comprising ~~including the additional step of~~ canceling a previously generated alert if the

3   trend in actual service ~~based on obtained samples of the metric using linear regression~~ indicates

4   that the predicted performance violation time will fall outside the [[fixed]] predetermined time

5   window.

1   Claim 7 (currently amended): For use in a system wherein at least one network performance

2   metric is required to comply with ~~predetermined requirements~~ a defined threshold, a computer-

3   implemented method for providing an anticipatory alert, ~~said method~~ comprising ~~the steps of~~:

4   monitoring [[the]] a provided service to obtain, on a recurring basis, sets of samples

5   representing actual network performance;

6   using only the obtained sets of samples containing at least a predetermined minimum

7   number of samples [[and]] in a linear regression analysis ~~techniques~~ to generate a mathematical

8   representation of a current trend in the network performance, ~~said using step including the~~

9 ~~additional steps of~~ <u>further comprising</u>:

10   calculating predefined statistical parameters of each obtained set of samples ~~and~~

11 ~~determining a ratio of the predefined statistical parameters,~~

12   determining whether the ~~ratio of the~~ calculated <u>predefined</u> statistical parameters

13 <u>meet a</u> [[meets]] predefined threshold ~~requirement~~s <u>requirement</u>, and

14   <u>using, in the linear regression analysis, only the obtained sets of samples for which</u>

15 ~~terminating the step of generating a mathematical representation of a current trend in the network~~

16 ~~performance metric if the ratio of~~ the calculated <u>predefined</u> statistical parameters ~~for an obtained~~

17 ~~set of samples fails~~ <u>are determined</u> to meet the predefined threshold ~~requirement~~s <u>requirement</u>;

18 using the mathematical representation, predicting [[the]] <u>a</u> time when the network

19 performance metric will exceed [[a]] <u>the</u> defined threshold if the current trend continues;

20 generating [[an]] <u>the anticipatory</u> alert if the predicted time is within a fixed time window

21 ~~which begins upon execution of the method~~ <u>measured from a current time at which the prediction</u>

22 <u>is made</u>; and

23 canceling [[the]] <u>a previously</u> generated alert if a <u>subsequently-generated</u> mathematical

24 representation ~~of a subsequent trend based on obtained samples of the network performance metric~~

25 ~~using linear regression indicates~~ <u>of the current trend predicts</u> that the <u>time when the network</u>

26 <u>performance metric will exceed the defined threshold is not within the</u> ~~performance violation time~~

27 ~~will fall outside a~~ fixed time window <u>measured from a current time at which the subsequent</u>

28 <u>prediction is made</u>.

Claims 8 - 10 (canceled)

1   Claim 11 (currently amended): A computer-implemented method as set forth in claim 7, wherein:

2   the calculated predefined statistical parameters comprise [[the]] a standard deviation and

3   mean of the set of samples; and

4   the predefined threshold requirement requires that the standard deviation be no greater than

5   a predetermined percentage of the mean.

1   Claim 12 (currently amended): A system for providing an anticipatory alert indicating a predicted

2   violation of a predetermined network performance requirement, the system comprising:

3   a performance monitor which obtains sets of samples of a predefined service metric on a

4   recurring basis;

5   a sample processor which receives the obtained sets of samples and generates a

6   mathematical representation of a current trend in service metric values [[if]] using ones of the

7   obtained [[set]] sets of samples that contain contains at least a predetermined, minimum number of

8   samples, wherein the mathematical representation comprises a linear regression performed said

9   sample processor further containing logic for performing linear regression operations using the

10   ones of the obtained sets of samples of the predefined service metric, said logic including and the

11   sample processor further comprises:

12   statistical logic for determining [[the]] a standard deviation and [[the]] a mean of

13   the ones of the [[each]] obtained [[set]] sets of samples,

14   arithmetic logic for determining [[the]] a ratio of the standard deviation and the

15   mean of the ones of the [[each]] obtained [[set]] sets of samples, and

16   prediction ~~thresholding~~ logic for ~~terminating any~~ <u>generating a</u> prediction<u>, using the</u>

17   <u>ones of the obtained sets of samples in which the</u> ~~where an obtained set of samples is determined to~~

18   ~~have a~~ ratio of the standard deviation and the mean ~~of each obtained set of samples exceeding~~ <u>does</u>

19   <u>not exceed</u> a predefined threshold<u>, of a time at which the service metric will cross a defined</u>

20   <u>threshold if the current trend continues</u>; <u>and</u>

21   ~~logic elements which use the generated mathematic representation to predict when the~~

22   ~~service metric will cross a defined threshold if the trend represented by the mathematical model~~

23   ~~continues; and~~

24   an alert generator for generating [[an]] <u>the anticipatory</u> alert if the ~~determined~~ time <u>at</u>

25   <u>which the service metric will cross the defined threshold</u> is less than a predetermined time from

26   [[the]] <u>a</u> current time <u>at which the prediction is made</u>.

Claims 13 - 18 (canceled)

1   Claim 19 (currently amended): An article of manufacture comprising a computer useable <u>storage</u>

2   medium having a computer readable program embodied ~~in said medium~~ <u>therein</u>, wherein the

3   computer readable program when executed in [[the]] <u>a</u> computer causes the computer to:

4   receive, on a recurring basis, sets of samples of a service metric obtained by monitoring

5   [[the]] performance of a network;

6   calculate predefined statistical parameters of <u>the</u> sets of obtained samples;

7   determine whether the calculated <u>predefined</u> statistical parameters meet predefined

8   threshold requirements, wherein the predefined threshold requirements include <u>requiring</u> a

9   minimum number of samples for each obtained ~~sample~~ set and a ratio of the calculated <u>predefined</u>

10   statistical parameters <u>that does not exceed a predetermined ratio</u>;

11   ~~ignore any set of samples for which the predefined threshold requirement is not met;~~

12   use ~~retained~~ <u>ones of the</u> sets of samples ~~meeting~~ <u>which meet</u> the predefined threshold

13   requirements ~~in generating~~ <u>to generate</u> a mathematical representation of a current trend in <u>the</u>

14   service metric ~~values~~;

15   use the mathematical representation to predict <u>a time</u> when the service metric will exceed a

16   defined threshold if the current trend continues; and

17   generate an <u>anticipatory</u> alert if the <u>predicted</u> ~~elapsed~~ time is less than a predefined time

18   <u>from a time at which the prediction is made</u>.